



# FMSP Lectures

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Representations of reductive groups and L-functions.

Lecture (I) July 18 (Thursday) 16:30 ~ 18:00 Room 117

Lecture (II) July 26 (Friday) 10:30 ~ 12:00 Room 118

Abstract:

This is an introduction to the theory of L-functions and in particular of the local L-factors of representations in real and complex groups. Some familiarity with infinite dimensional representations would be very helpful, but I will not assume any knowledge of number theory. We will start in the first lecture by considering L-functions for Groessen characters and classical automorphic forms, in other words for automorphic representations of  $G(1)$  and  $GL(2)$ . This will motivate the definition of the local L-factors of representations of  $GL(1, \mathbb{R})$  and  $GL(2, \mathbb{R})$ . Then we will discuss Rankin convolutions and define the L-factors for infinite dimensional tempered representations of  $GL(n, \mathbb{R})$ .

In the second lecture we will quickly discuss Rankin Selberg integral approach to L-factors and then Shahidi's method of constructing L-functions by relating them to intertwining operators, leading to the definition of the the L-factors of tempered non degenerate representations. The lecture closes with a discussion of L-factors for nontempered representations.